

**Climatological Data for September, 1910.
DISTRICT No. 5, UPPER MISSISSIPPI VALLEY.**

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GENERAL SUMMARY.

September, 1910, was a very pleasant month over the upper Mississippi Valley, and was exceptionally favorable for all kinds of outdoor work, and over the larger part of the district the conditions were favorable for ripening and securing the late crops. The departures from the normal temperature, precipitation, and sunshine were slight. The mean temperature for the district was only 0.5° below, and the average rainfall 0.21 inch above the normal.

While there were some warm days and a few cool nights, there were not as many sudden changes in temperature as usual during September, and those that did occur were not severe. The periods of comparatively low temperature were of short duration and caused little or no damage to vegetation. A cool wave spread over the district between the 9th and 12th, which caused light frost on low land as far south as Iowa, central Illinois, and Indiana, and heavy to killing frost with freezing temperature at many stations over the northern sections. Another cool spell occurred on the 26-28th, during which freezing temperatures again occurred over parts of North Dakota, Minnesota, and Wisconsin, with light to heavy frost in the central portions of the district, but as vegetation was so nearly matured no material damage was done, except to tender vines and garden truck. The 7th was generally the hottest day, but the temperatures were high also on the 4th, 17th, and 18th and in the northwestern section on the 27th to 30th. Maximum temperatures of 90° or above were recorded in all sections, except Missouri, where the highest was 88° on the 8th.

The rainfall was generally abundant, but there was quite a variation in the distribution, both geographically and as to time. Over the southern and middle sections, however, showers were frequent and well distributed throughout the month and copious falls occurred in all districts during the first and third decades, but over the northern States the showers were light and scattered during the second decade.

TEMPERATURE.

The average temperature was slightly below the normal in all of the States in the district, except Minnesota, where there was an excess of 0.3° . The greatest deficiency was -2.4° in South Dakota, and the monthly means by States ranged from 54.9° for North Dakota to 67.0° for Missouri. The mean temperature for the district, as shown by the reports of 292 stations, was 61.3° , 0.5° below the normal. The highest monthly mean was 74.2° at Cobden, Ill., and the lowest, 51.3° at Langdon, N. Dak. The highest temperature recorded was 97° at Clear Lake, Iowa, on the 7th, and the lowest was 20° at Crosby, N. Dak., on the 26th, and at Fram, Minn., on the 12th.

PRECIPITATION.

As stated above the rainfall was generally abundant and fairly well distributed as to time during the first and third decades; the largest amounts occurred between the 2d and 6th and the 22d and 26th, and excessive amounts were recorded on one or more of those days at several stations in all except the northwest sections. The rainfall was light during the second decade, especially in the northern portions of the district. Geographically, the rainfall was unevenly distributed. In North Dakota the monthly amounts ranged from 0.23 inch at Edmore to 4.48 inches at Walhalla; in Minnesota, from 0.81 inch at Beardsley to 4.43 inches at Grand Meadow; in Wisconsin, from 1.16 inch at Delevan to 5.88 inches at Hillsboro; in Iowa, from 1.18 inch at Elma to 6.90 inches at Toledo; in

Missouri, from 2.76 inches at Gorin to 11.41 inches at Mexico; in Illinois, from 0.93 inch at Cairo to 9.21 inches at Mount Vernon. In Indiana, the distribution was more uniform; the least being 3.63 inches at Laporte and the greatest, 4.45 inches at Plymouth. The average precipitation for the district, as shown by the reports of 308 stations, was 3.29 inches, which is 0.21 inch above the normal, there being an excess in all but the Minnesota, South Dakota, and Wisconsin sections. The greatest amount, 11.41 inches, occurred at Mexico, Mo., and the least, 0.23 inch at Edmore, N. Dak. The greatest amount in 24 hours, 3.63 inches, occurred at Walhalla, N. Dak. Measurable precipitation occurred on an average of 8 days. There was no snowfall reported from any part of the district.

SUNSHINE AND CLOUDINESS.

The average number of clear days was 14; partly cloudy, 7; cloudy, 9. The duration of sunshine was near or slightly below the normal, except over northeastern Missouri, where there was a deficiency of about 10 per cent.

WIND.

Southwest winds prevailed. The highest velocity reported was 42 miles per hour from the north at Devils Lake, N. Dak., on the 22d.

MISCELLANEOUS.

The rains were of great benefit in reviving pasturage and aftermath in meadows, replenishing shallow wells and the surface water supply, softening the ground after the long summer drought for fall plowing, and starting the growth of winter grains in the southern districts. In northeastern Missouri and central and northern Illinois, however, plowing was delayed and the ripening of corn retarded on account of too much rain.

The only destructive windstorm reported passed over Iroquois County, Ill., on the 12th. It had some of the characteristics of a tornado and destroyed considerable property, but no loss of life was reported, although a number of persons sustained slight injuries.

More than the usual number of thunderstorms occurred during September, but the only storm, of which report has been received as having caused damage by lightning, occurred in Dubuque County, Iowa, on the evening of the 11th. The barns and outbuildings on the farm of Benjamin Johonnes, 5 miles northwest of Dyersville, were burned, together with their contents, including four valuable horses, grain, hay, machinery, and some poultry and hogs. The loss is estimated to have been over \$5,000. During this storm considerable stock was killed also near Luxemburg, in the same county, and creeks and meadows were flooded by rain, which fell in torrents for two hours.

RIVERS.

Although the stage of all rivers was somewhat higher than during August, they were still much below the normal.

The rivers throughout the Dubuque district averaged nearly a foot higher than during August, except in the Mississippi from La Crosse to St. Paul, where the rise was much less marked. At Dubuque the maximum stage was 2.0 feet on the 13th, and the minimum, 0.8 foot, on the 5th, 6th, and 7th. Navigation remained suspended throughout the month, owing to the low water, making three months continuously that packets have been unable to run on the upper Mississippi.—J. H. Spencer, Local Forecaster.

Although the Mississippi was higher than during August, the average stages in the Davenport district were lower than in any

other September since 1898. Through traffic over the Le Claire Rapids remains suspended.—*J. M. Sherier, Local Forecaster.*

ENGINEERING NOTES.

The work of surveying the Des Moines River was continued under the supervision of Mr. A. O. Rowse, Assistant Engineer, U. S. Army. During the month topography on both sides of the river covering area subject to overflow, soundings and探ings of the river bottom, and levels to determine water slope

were taken for a distance of 29 miles, completing the field work to a point 115 miles below Des Moines, and 18 miles of topography and soundings were platted.

The city council of Eldora, Iowa, has granted a franchise to the Park Dam Company, which will construct a cement dam on the Iowa River at that place for the purpose of developing water power. A large power house will be erected and a new electric system will be installed.

MONTHLY WEATHER REVIEW.

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TABLE 1.—Climatological data for September, 1910. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeted.	Number of rainy days .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>Illinois—Cont'd.</i>																				
Greenville.	Bond.	635	32	69.0	+ 0.2	89	8	48	28	29	6.47	+ 3.07	1.90	0.0	11	11	6	13	sw.	M. S. Oudyn.
Griggsville.	Pike.	650	25	66.2	- 1.8	86	8†	43	27	31	4.57	+ 0.64	1.00	0.0	7	15	5	10	se.	Geo. F. Kneeland.
Halfway.	Williamson.	569	14								5.70	+ 2.39	2.11	0.0	7					E. L. Hearn.
Havana.	Mason.	475	18	68.1	- 1.0	91	18	44	28	32	6.60	+ 2.71	3.55	0.0	7	11	16	1	w.	F. & C. Borgelt.
Henry.	Marshall.	500	22	65.3	0.0	85	7†	40	28	34	3.53	+ 0.26	1.19	0.0	12	15	4	11	ne.	Dr. F. A. Powell.
Hillboro.	Montgomery.	675	16	68.2	- 1.1	90	8†	44	28†	38	6.14	+ 2.65	1.30	0.0	11	14	3	13	s.	Ira L. Woodward.
Joliet.	Will.	541	19	64.2	- 0.4	87	3	42	28	38	2.75	- 0.78	1.58	0.0	11	9	5	18	sw.	F. M. Muhlig.
Kishwaukee.	Winnebago.	730	22	62.6	- 0.8	83	7	37	10†	37	2.66	- 0.40	0.76	0.0	8	13	7	10	s.	Geo. Stevens.
La Grange.	Cook.	657	18	63.2	- 0.8	84	7	42	28	35	4.39	+ 0.59	1.40	0.0	8	15	5	10	sw.	Prof. F. E. Sanford.
La Harpe.	Hancock.	698	31	64.6	- 1.6	88	18	40	27†	35	2.74	- 1.35	0.75	0.0	6	14	4	12	se.	Jno. S. Campbell.
Lanark.	Carroll.	833	21	62.2	- 0.4	84	5	33	10	40	2.37	- 0.90	0.73	0.0	13	19	3	8	ne.	M. N. Wertz.
La Salle.	La Salle.	536	33	64.8	+ 0.9	83	3	41	28	31	5.09	+ 1.89	1.60	0.0	13	11	8	11	ne.	U. S. Weather Bureau.
Lincoln.	Logan.	482	29	66.3	- 1.1	87	13	37	28	33	4.41	+ 1.02	1.82	0.0	10	13	10	7	s.	Prof. C. S. Oglevee.
Martinton.	Iroquois.	633	23	65.0	+ 0.2	88	8	39	10	40	4.50	+ 1.11	0.05	0.0	12	12	5	13	sw.	Jos. H. Peltier.
Mascoutah.	St. Clair.	425	20	71.6	+ 1.7	95	12	42	28	39	7.84	+ 4.15	3.30	0.0	11	12	11	7	se.	Geo. Henrich.
Minonk.	Woodford.	745	17	66.0	- 0.1	90	18	40	28	37	3.91	+ 0.25	1.30	0.0	9	13	10	7	sw.	O. M. Davison.
Mouthmouth.	Warren.	784	18	65.2	- 0.8	85	22†	42	28	35	2.80	- 1.32	0.85	0.0	8				sw.	Hugh R. Moffet.
Morrison.	Whiteside.	635	16	63.4	- 1.0	82	17	35	10	33	3.80	+ 0.29	1.33	0.0	10	14	7	9	se.	S. A. Maxwell.
Morrisonville.	Christian.	638	11	67.4	- 0.5	89	8†	33	28	34	4.78	+ 1.81	0.90	0.0	11	16	2	12	sw.	J. D. Louis.
Mount Vernon.	Jefferson.	511	16	70.4	+ 0.1	90	5†	43	28	32	9.21	+ 5.73	2.45	0.0	9	17	3	10	n.	Theo. P. Stelle.
Oregon.	Ogle.	702	1	63.3		83	7	40	28	36	2.20		1.28	0.0	6	13	4	10	s.	Samuel Ray.
Ottawa.	La Salle.	500	24	64.4	- 0.8	83	3†	41	28	35	6.23	+ 2.75	1.65	0.0	11	14	1	15	sw.	Miss M. M. Harris.
Pana.	Christian.	692	24	67.9	+ 0.2	88	12	45	10	28	5.95	+ 2.43	1.98	0.0	12	20	3	7	sw.	C. W. Sibley.
Peoria.	Peoria.	609	33	65.3	+ 1.0	91	18	39	28	34	3.12	0.00	0.87	0.0	12	8	12	10	s.	U. S. Weather Bureau.
Pontiac.	Livingston.	546	8	66.6		92	7	42	28	36	4.10		1.12	0.0	12	8	12	10	sw.	Geo. Butterworth.
Riley.	McHenry.	956	51	62.3	+ 0.6	81	8	42	27†	29	2.57	- 1.14	1.33	0.0	9	10	0	10	sw.	John West James.
Rockford.	Winnebago.	763	18	61.6	- 1.8	82	7	41	10†	36	2.12	- 0.80	0.75	0.0	9	20	0	10	sw.	Hosmer C. Porter.
Rushville.	Schuyler.	870	19	66.5	- 0.1	88	18	44	27	28	4.21	+ 0.32	1.80	0.0	7	12	4	14	s.	H. F. Dyson.
St. Charles.	Kane.	700	15	63.0	- 1.1	83	7	36	10†	36	2.88	- 1.70	0.90	0.0	8	11	10	9	ne.	Dr. Wm. H. Bishop.
St. Peter.	Fayette.	537	9.7			90	8†	46	28	33	5.27		1.50	0.0	9	19	9	11	ne.	M. L. Lansford.
Sparta.	Randolph.	538	24	70.6	+ 1.0	91	12	39	28	35	4.47	+ 1.17	1.20	0.0	12	13	13	4	s.	Jas. A. Caldwell.
Springfield.	Sangamon.	644	33	67.6	+ 1.2	89	8	45	28	28	5.34	+ 1.97	2.11	0.0	10	12	6	12	s.	U. S. Weather Bureau.
Streator.	La Salle.	626	17	64.6	- 1.8	88	11	38	28	43	4.59	+ 1.17	1.11	0.0	12	15	0	15	sw.	Edw. F. Sweetser.
Sullivan.	Moultrie.	530	18	68.0	- 0.1	90	8	43	10†	26	7.94	+ 4.95	2.15	0.0	11	13	10	7	sw.	C. A. Corbin.
Sycamore.	De Kalb.	855	30	62.6	0.0	86	23	37	10†	46	1.80	- 1.59	0.75	0.0	9	15	2	13	se.	Miss E. J. Davis.
Tiskilwa.	Bureau.	708	18	65.8	+ 0.9	87	3	40	27	34	2.51	- 1.91	0.85	0.0	10	18	3	9	s.	F. I. Smucker.
Walnut.	do.	717	19	65.9	- 0.8	84	11	42	28	33*	4.81	+ 0.88	2.24	0.0	11	18	5	7	se.	O. C. Nussle.
White Hall.	Greene.	573	2	66.8		83	8	39	28	35	7.29		3.00	0.0	12	14	5	11	sw.	Dr. R. A. Pritchett.
Windsor.	Shelby.	681	11	68.6	+ 1.3	93	8	40	28	40	4.33	+ 1.08	1.48	0.0	11	12	5	13	sw.	Herbert Rose.
Yorkville.	Winnebago.	900	23	62.9	- 0.4	83	7	38	10†	36	2.61	- 0.87	0.85	0.0	7	17	8	5	sw.	Frank Osborn
Zion.	Kendall.	584	23	62.7	- 0.5	84	3	37	28	35	5.58	+ 1.98	2.40	0.0	13	13	5	12	w.	Herman A. Grimwood.
	Carroll.	938	16	62.4	- 0.9	84	5	37	10	34	2.56	- 0.67	1.37	0.0	6	22	3	5	w.	Robt. F. Gillogy.

*, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

* Precipitation included in that of the next measurement.

** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

‡ Separate dates of falls not recorded.

§ Data are from standard instruments not supplied by the U. S. Weather Bureau.

|| Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

||| Estimated by observer.

||| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for September, 1910. District No. 5—Continued.*

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TABLE 3.—Maximum and minimum temperatures at selected stations, September, 1910. District No. 5—Continued.

Date.	Illinois.																		Winnebago.					
	Hannibal, Mo.			Laporte, Ind.			Cairo.			Greenville.			La Salle.			Monmouth.			Mt. Vernon, Ill.			Peoria.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.	68	60	72	58	82	70	82	63	73	54	76	55	86	64	70	56	74	61	71	55	70	59	80	47
2.	77	62	75	60	82	69	82	62	80	49	81	51	89	64	80	53	79	59	80	50	82	62	80	65
3.	77	69	83	62	83	67	74	65	83	66	84	51	80	65	80	62	78	79	82	72	72	67	72	64
4.	82	67	80	63	88	73	75	65	78	69	82	64	84	79	67	79	72	79	72	72	72	72	72	72
5.	77	67	81	64	88	69	86	70	82	70	84	67	90	61	80	69	81	71	72	72	72	72	72	64
6.	83	62	83	62	83	69	79	68	81	64	84	59	83	68	83	63	82	67	80	62	80	62	80	62
7.	76	66	82	55	90	73	86	68	82	59	80	60	90	68	82	58	80	68	83	64	82	68	83	64
8.	86	64	88	61	91	71	89	68	77	62	86	50	90	68	86	62	89	67	80	61	80	61	80	61
9.	67	54	76	55	75	62	75	57	66	50	72	63	67	49	68	53	72	64	72	64	72	64	72	64
10.	70	46	70	40	76	57	74	49	71	43	79	50	71	41	72	47	70	50	72	47	70	50	72	38
11.	85	56	78	43	87	61	84	55	82	53	84	52	83	53	82	54	80	54	80	54	80	54	80	44
12.	77	59	69	57	90	71	87	67	75	53	90	61	74	55	86	55	82	55	82	55	82	55	82	53
13.	66	55	62	56	83	69	76	62	68	52	50	82	59	67	53	66	57	68	63	64	66	63	64	64
14.	70	56	73	43	74	62	75	56	69	51	48	74	57	70	49	71	54	71	54	71	54	71	54	66
15.	64	54	67	50	75	58	67	51	71	46	48	75	56	72	47	68	52	75	52	75	52	75	52	66
16.	76	56	75	45	80	56	79	53	77	47	48	80	52	79	48	77	53	79	48	77	53	79	48	66
17.	83	55	75	46	84	57	85	55	81	58	51	84	56	83	56	82	54	81	54	81	54	81	54	81
18.	88	63	75	42	85	61	86	61	79	61	51	88	63	91	62	88	64	88	64	88	64	88	64	88
19.	82	63	68	60	86	65	83	67	70	60	59	85	68	75	60	83	66	86	66	86	66	86	66	86
20.	83	59	73	53	90	67	82	62	79	57	83	55	84	63	85	56	84	59	84	59	84	59	84	59
21.	83	53	71	49	83	66	88	59	76	53	82	51	84	62	83	49	83	58	75	56	80	54	80	49
22.	82	57	73	48	85	63	83	57	81	53	85	51	85	55	84	54	82	55	80	55	80	55	80	49
23.	73	67	65	55	87	65	74	65	70	58	72	60	82	58	71	62	72	66	70	52	72	66	70	52
24.	70	57	69	55	83	68	72	62	70	56	68	53	74	63	69	56	72	57	66	56	72	57	66	56
25.	70	55	62	50	77	65	74	54	63	49	74	47	73	60	70	51	69	54	62	50	69	54	62	50
26.	71	51	66	47	86	64	73	61	72	49	71	53	79	60	72	52	73	57	65	43	65	43	65	43
27.	65	45	66	42	70	59	68	53	65	47	68	43	68	57	65	43	65	48	65	48	65	48	65	48
28.	70	42	68	44	75	56	72	48	72	41	77	42	74	43	73	39	69	45	74	38	69	45	74	38
29.	75	45	70	42	78	58	78	51	74	48	77	44	79	47	75	42	74	49	74	49	74	49	74	49
30.	86	60	78	45	83	61	81	55	82	56	85	54	82	50	83	54	82	56	80	56	80	56	80	56
31.	Means.....		76.1	57.2	73.0	51.7	82.6	64.4	78.5	59.6	75.0	54.5	52.1	61.6	59.3	76.7	54.0	77.0	58.1	74.2	51.6		